

IN THE CLAIMS

For the convenience of the Examiner, all pending claims of the present Application are shown below whether or not an amendment has been made. The amended claims are so indicated. Please refer to the attached sheets showing a marked up version of the amendments to the claims.

1. A system for determining subscriber information, comprising:

an access server coupled to a plurality of subscribers using a communication network and operable to receive a communication from a particular subscriber using a particular one of a plurality of virtual circuits associated with the communication network;

a memory coupled to the access server and operable to store subscriber information for the subscribers, wherein the subscriber information is indexed by path information that identifies a virtual circuit assigned to the particular subscriber; and

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B1 a processor coupled to the memory and operable to determine subscriber information for communication to the particular subscriber based upon the path information and the particular virtual circuit used to receive the communication from the particular subscriber.

2. The system of Claim 1, wherein:

the access server comprises one of a plurality of access servers coupled to the processor;

the path information further identifies an access server assigned to the particular subscriber; and

the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information and an identifier of the particular access server coupled to the particular subscriber.

3. The system of Claim 1, wherein the access server comprises:

an interface coupled to the particular subscriber using the particular virtual circuit; and

a controller coupled to the interface and operable to communicate a request identifying the particular virtual circuit that couples the interface and the particular subscriber.

4. The system of Claim 3, wherein:

the interface comprises a plurality of network line cards;

the path information further identifies a network line card assigned to the particular subscriber; and

the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information and an identifier of a particular network line card coupled to the particular subscriber.

5. The system of Claim 3, wherein the request comprises:

interface information identifying the interface coupled to the particular subscriber;

virtual circuit information identifying the particular virtual circuit; and

access server information identifying the access server.

6. The system of Claim 3, wherein the request comprises a RADIUS protocol request.

7. The system of Claim 3, wherein the request comprises a trivial file transfer protocol request.

8. The system of Claim 1, wherein the particular virtual circuit is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

9. The system of Claim 1, wherein the path information comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

10. The system of Claim 1, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

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11. The system of Claim 1, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

12. A method for determining subscriber information, comprising:
receiving a communication from a particular one of a plurality of subscribers using a particular one of a plurality of virtual circuits associated with a communication network;
storing subscriber information for the subscribers, wherein the subscriber information is indexed by path information that identifies a virtual circuit assigned to the particular subscriber; and
determining the subscriber information for communication to the particular subscriber based upon the path information and the particular virtual circuit used to receive the communication from the particular subscriber.

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13. The method of Claim 12, wherein:
the particular virtual circuit couples the particular subscriber to a particular one of a plurality of access servers;
the path information further identifies an access server assigned to the particular subscriber; and
the step of determining further comprises determining the subscriber information for the particular subscriber based upon the path information and an identifier of the particular access server coupled to the particular subscriber.

14. The method of Claim 13, wherein the particular access server comprises:
an interface coupled to the particular subscriber using the particular virtual circuit;
and
a controller coupled to the interface.

15. The method of Claim 14, wherein:
the interface comprises a plurality of network line cards;
the path information further identifies a network line card assigned to the particular subscriber; and
the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information and an identifier of a particular network line card coupled to the particular subscriber.

16. The method of Claim 12, wherein the particular virtual circuit is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

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B1 17. The method of Claim 12, wherein the path information comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

18. The method of Claim 12, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

19. The method of Claim 12, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

20. An information server comprising:

a memory operable to store subscriber information for a plurality of subscribers, wherein the subscriber information is indexed by path information that identifies a virtual circuit assigned to a particular subscriber; and

a processor coupled to the memory and operable to determine the subscriber information for communication to the particular subscriber based upon the path information and a particular virtual circuit that couples the particular subscriber to an access server.

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B1 21. The information server of Claim 20, wherein:

the path information further identifies an access server assigned to the particular subscriber; and

the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information and an identifier of the access server coupled to the particular subscriber.

22. The information server of Claim 20, wherein:

the path information further identifies a network line card of the access server assigned to the particular subscriber; and

the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information and an identifier of the network line card.

23. The information server of Claim 20, wherein the processor determines the subscriber information for communication to the particular subscriber in response to receiving a request comprising:

interface information identifying an interface of the access server coupled to the particular subscriber;

virtual circuit information identifying the particular virtual circuit; and

access server information identifying the access server.

24. The information server of Claim 23, wherein the request comprises a RADIUS protocol request.

25. The information server of Claim 23, wherein the request comprises a trivial file transfer protocol request.

26. The information server of Claim 20, wherein the virtual circuit is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

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B)* 27. The information server of Claim 20, wherein the path information comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

28. The information server of Claim 20, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

29. The information server of Claim 20, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

30. A method for determining subscriber information, comprising:

receiving a request identifying a particular one of a plurality of virtual circuits associated with a communication network, wherein the particular virtual circuit is used by an access server to receive a communication from a particular one of a plurality of subscribers;

storing subscriber information for the subscribers, wherein the subscriber information is indexed by path information that identifies a virtual circuit assigned to the particular subscriber; and

determining the subscriber information for communication to the particular subscriber based upon the path information and the particular virtual circuit used by the access server to receive the communication from the particular subscriber.

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31. The method of Claim 30, wherein:

the particular virtual circuit couples the particular subscriber to a particular one of a plurality of access servers;

the path information further identifies an access server assigned to the particular subscriber; and

the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information and an identifier of the particular access server coupled to the particular subscriber.

32. The method of Claim 31, wherein the particular access server comprises:

an interface coupled to the particular subscriber using the particular virtual circuit; and

a controller coupled to the interface.

33. The method of Claim 32, wherein:

the interface comprises a plurality of network line cards;

the path information further identifies a network line card assigned to the particular subscriber; and

the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information and an identifier of a particular network line card coupled to the particular subscriber.

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34. The method of Claim 30, wherein the particular virtual circuit is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

35. The method of Claim 30, wherein the path information comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

36. The method of Claim 30, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

37. The method of Claim 30, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

38. An access server, comprising:

an interface coupled to a plurality of subscribers using a communication network and operable to receive a communication from a particular subscriber using a particular one of a plurality of virtual circuits associated with the communication network; and

a controller coupled to the interface and operable to communicate a request to an information server for determining subscriber information associated with the particular subscriber, the request identifying the particular virtual circuit used to receive the communication from the particular subscriber.

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39. The access server of Claim 38, wherein the controller is further operable to communicate the subscriber information to the particular subscriber.

40. The access server of Claim 38, wherein the request comprises:

interface information identifying the interface coupled to the particular subscriber;
virtual circuit information identifying the particular virtual circuit; and
access server information identifying the access server.

41. The access server of Claim 38, wherein the request comprises a RADIUS protocol request.

42. The access server of Claim 38, wherein the request comprises a trivial file transfer protocol request.

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43. A method for determining subscriber information, comprising:
receiving a communication from a particular one of a plurality of subscribers using a particular one of a plurality of virtual circuits associated with a communication network; and communicating a request to an information server for determining subscriber information associated with the particular subscriber, the request identifying the particular virtual circuit used to receive the communication from the particular subscriber.

44. The method of Claim 43, further comprising communicating the subscriber information to the particular subscriber.

45. The method of Claim 43, wherein the request comprises:
interface information identifying an interface of an access server coupled to the particular subscriber;
virtual circuit information identifying the particular virtual circuit; and
access server information identifying the access server.

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46. **(Amended)** The method of Claim 43, wherein the request comprises a RADIUS protocol request.

47. **(Amended)** The method of Claim 43, wherein the request comprises a trivial file transfer protocol request.

48. A computer program for determining subscriber information, the program encoded on a computer-readable medium and operable to execute the following steps:

receiving a communication from a particular one of a plurality of subscribers using a particular one of a plurality of virtual circuits associated with a communication network;

storing subscriber information for the subscribers, wherein the subscriber information is indexed by path information that identifies a virtual circuit assigned to the particular subscriber; and

determining the subscriber information for communication to the particular subscriber based upon the path information and the particular virtual circuit used to receive the communication from the particular subscriber.

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49. The computer program of Claim 48, wherein:

the particular virtual circuit couples the particular subscriber to a particular one of a plurality of access servers;

the path information further identifies an access server assigned to the particular subscriber; and

the step of determining further comprises determining the subscriber information for the particular subscriber based upon the path information and an identifier of the particular access server coupled to the particular subscriber.

50. The computer program of Claim 49, wherein the particular access server comprises:

an interface coupled to the particular subscriber using the particular virtual circuit; and

a controller coupled to the interface.

51. The computer program of Claim 50, wherein:
the interface comprises a plurality of network line cards;
the path information further identifies a network line card assigned to the particular subscriber; and

the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information and an identifier of a particular network line card coupled to the particular subscriber.

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52. The computer program of Claim 48, wherein the particular virtual circuit is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

53. The computer program of Claim 48, wherein the path information comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

54. The computer program of Claim 48, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

55. The computer program of Claim 48, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.